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Periodontal treatment needs among dental and non dental Iraqi students (A comparative study)

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Abstract

The direct relation between periodontal disease and the oral hygiene level on one hand and the level of education on the other hand were repeatedly proved throughout a large number of epidemiologic periodontal studies. Based on this fact, one can conclude that the periodontal treatment need among highly educated individuals (as university students) seems to be less than that of individuals with low educational level, but a question that may arise in this area is: Does the treatment need among dental students differ from that of their colleagues in other studies or not? The present research aimed at providing an answer for this question. Three hundreds university students (150 dental &150 non dental) were examined by using CPITN and the data were analyzed statistically. Results indicated that in general the periodontal treatment need was comparable between dental and non dental students in this social class. Results also indicated that programs aimed at improvement of oral hygiene of this social class may be applicable in our community, the matter that calls for full cooperation from the health authorities to carry out a national campaign directed toward this social class.

Key words: CPITN.   Dental student.   Treatment need. Periodontal. Epidemiology.

Introduction

Along the long history of struggling against the dental and periodontal disease, a large number of epidemiologic indices had been used and a huge number of epidemiologic studies been carried out [1-7], but despite of all these efforts the need for further investigations still been necessary, because the explosive growth of the population seems to arose any development in dental manpower and financial resources budgeted for this purpose.

However, the last few decades have witnessed a reduction in the severity and prevalence of dental and periodontal diseases among the population of the developed countries, [8-10] as these countries have implemented dental care programs that been systematically organized to improve dental health attitudes among different population age groups. [11] This development has improved children's dental health and changed the dental caries patterns affecting them, and it also resulted in that more adults being able to keep their natural

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dentition in a good functional state till a later period of age. [12] Unfortunately, this figure is not true for the developing countries as

the countries in the Middle East [13, 14] where the dental manpower and financial resources distinctly left behind the treatment needs.

The great achievements in this field in the developed countries were logically been based on a representative epidemiological studies using a reliable indices that not only clarify the etiological factors of the disease, but also provide a virtual image on the manpower and financial recourses needed for such achievements.

The need for such indices seems to be gaped by the Community Periodontal Index of Treatment Needs (CPITN) proposition in 1982 and the rapid acceptance of this instrument that provided the scientific community with an enormous amount of epidemiological data collected through this index **(table 1)**. However based on the limitations identified by several authors during years of research, the World Health Organization (WHO) proposed a few changes to the CPITN in 1987 and again in 1997, but the instrument's diagnostic criteria were basically unaffected by these modifications [15]. The CPITN has proven to be a useful tool for planning periodontal treatment needs, establishing population periodontal health goals, and evaluating changes in the periodontal status of a given population after a program implementation. [16-20]

The direct relation between periodontal disease and the oral hygiene level on one hand and the level of education on the other hand were repeatedly proved throughout a large number of epidemiologic studies [21-23]. Based on results estimated from these studies, one can concludes that

the periodontal treatment need among highly educated individuals as university students seems to be less than that of individuals with low educational level, but a question that may arise in this area is: **Does the treatment need among dental students differ from that of their colleagues in other studies or not?** The present research aimed at providing an answer for this question.

Materials and methods

A screening clinical survey using CPITN was carried out for university students in different colleges of Al-Mustansiria University after taking permission from the concerned authorities. Periodontal examination was performed with the WHO periodontal probe in accordance with the recommendations for using the CPITN for adults. According to that index teeth examined were 17, 16, 11, 26, 27, 37, 36, 31, 46, and 47. This survey was carried out by the staff of the department of Periodontology of the college of dentistry in the same university. The participant dentists were passed both intra examiner and inter examiner calibration tests successfully before conduction of this survey. Each student was examined under the day light using sterilized dental instruments including dental mirrors and the above mentioned color coded WHO periodontal probes. From the collected data a random sample of three hundreds students was chosen and allocated into two groups according to the type of study (150 dental & 150 non dental). And for standardization purposes each group was consisting of 75 males and 75 females **(table 2).** A total number of 1800 sextants according to CPITN were examined as shown in table (1). Suitable descriptive statistics including

tables and figures were used in this study.

Results

Results of this study will be described by CPITN codes as showed in Table (3) & figure (1). And the treatment need can be subsequently estimated by taking a quick glance on the table (1).

Code 0

This code was found to be higher in dental than non dental students and it is higher in females than males in the same group. In more detailed figure it was recorded in 23.82% of dental students (12.16% for females & 11.66 % for males) and in 16.44% of non dental students (9.11% for females & 7.33% for females).

Code I

Higher values of this code were recorded for non dental (16.16%) than dental students (13.77%). Moreover, it was found to be higher in males than females in both non dental (8.44% compared to 7.72%) and dental (7.05% compared to 6.72%) students.

Code II

Higher records regarding this code were found in non dental students (15.88%) compared to dental students (12.38%) and in more details, there is a slight higher difference in the values of this code between males (6.27%) and females (6.11%) for dental students while there is no difference between males and females for non dental students.

Code III & IV

Code III was found in only 1% of the examined students, all of them were non dental students (0.77% females & 0.23% males) while code IV was not recorded over all this study.

In the comparative view the two tailed paired comparative test showed that the differences between dental students and their colleague were highly significant in both genders.

In the other view regarding the treatment need the results showed that more than 40% of the examined individuals were free of periodontal disease and do not need any type of periodontal treatment compared to about 29 % (having code I) were in need of motivation and instructions and about 28 % need additional scaling and polishing (having code II) and a very little percentage 1% in need of other complicated periodontal treatment. On the other hand Code IV was not recorded in this study.

Discussion

The CPITN is a practical approach for screening populations because of its simplicity which enables rapid assessment of individuals for periodontal conditions relative to treatment needs. In addition, the results of CPITN surveys from many countries around the world are now received, analyzed and stored at the Global Oral Data Bank (GODB) at the WHO Headquarters in Geneva [24].

The main clinical parameter accounted for the periodontitis diagnosis through the CPITN is probing depth. This may be the most reasonable explanation for the operational characteristics observed in any epidemiologic periodontal study [25]. And this factor should be always kept in mind despite of all the calibration processes that undertaken through out any epidemiologic study. It is a noticeable fact that Most of studies always use the CPITN to estimate the prevalence and severity of periodontal disease, while the main objective of the introduction of this index is to estimate the treatment need on a community level. For this reason the results in this study were described by codes rather

than the percentages of prevalence and severity of periodontal disease.

The other important findings of this research is that most of students in this social class were not in need of complicated treatment and this fact indicated that programs aimed at improvement of oral hygiene of this social class may be applicable in our community, the matter that calls for full cooperation from the health authorities to carry out a national campaign directed toward this social class. The expected results of such campaign have a great chance to be valuable in term of cost- benefit criteria.

Results of this study can be also considered as another documentation for the positive effect of the level of education on the oral hygiene of the involved individuals.

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Table (1) Codes, Periodontal Condition & Treatment need according to CPITN

Codes	Periodontal Condition	Treatment need
0	No bleeding No calculus No pathological pocket	no need for additional treatment
1	Bleeding on probing gingival margin No calculus No pathological pocket	need to improve personal oral hygiene
2	Presence of calculus (sub or supragingival) with or without bleeding No pathological pocket	need for professional cleaning of teeth, plus improvement in personal oral hygiene
3	Pathological pocket of 4-5 mm with orwithout bleeding and calculus	need for professional cleaning of teeth, plus improvement in personal oral hygiene
4	Pathological pocket of 6 mm or more with or without bleeding and calculus	need for more complex treatment to remove infected tissue

Table (2) distribution of the population sample

Study / Gender	Female	Male	Total
Dental students	75 (450 sextants)	75 (450 sextants)	150 (900sextants)
Non dental students	75 (450 sextants)	75 (450 sextants)	150 (900sextants)
Total	150 (900 sextants)	150 (900 sextants)	300 (1800sextants)

Table (3) The CPITN codes by type of study and gender

CPITN		Code 0 No (%)	Code 1 No (%)	Code 2 No (%)	Code 3 No (%)	Code 4 No (%)
Dental students	Female	219 (12.16%)	121 (06.72%)	110 (06.11%)	0 (0%)	0 (0%)
	Male	210 (11. 66%)	127 (07. 05%)	113 (06.27%)	0 (0%)	0 (0%)
Non dental students	Female	164 (09.11%)	139 (07.72%)	143 (07. 94%)	4 (0.225)	0 (0%)
	Male	141 (07. 33%)	152 (08.44%)	143 (07. 94%)	14 (0.77%)	0 (0%)
Total		734 (40.77%)	539 (29. 94%)	509 (28. 27%)	18 (1.0%)	0 (0%)

Table (4) paired sample test

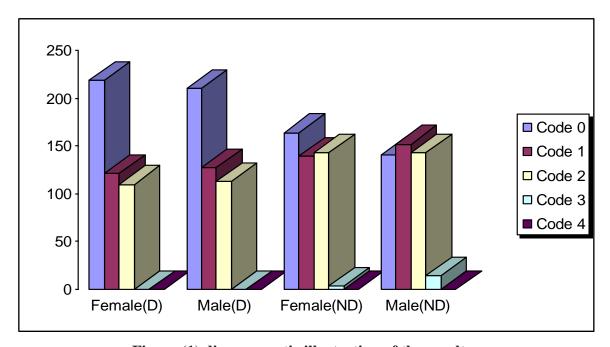|	Paired Differences			t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean			
Male ND – Male D	.28444	.45165	.02129	13.360	449	.000
Female ND – Female D	.21333	.41012	.01933	11.035	449	.000

Figure (1) diagrammatic illustration of the results